AMENDMENTS TO THE CLAIMS

1. (Currently Amended) In a multi-point communications system having a receiver and transmitter disposed at a primary site for communication with a plurality of remote units disposed at respective secondary sites, an antenna comprising:

multiple elements for receiving communications signals over a carrier frequency from [[a]] said plurality of remote units, said elements being partitioned into a plurality of groups disposed remote from one another by at least a predetermined minimum group spacing sufficient to obtain spatial diversity, each group containing at least one element, at least one group including multiple elements located proximate to one another and no further apart than a predetermined maximum element spacing to facilitate spatial filtering.

2. (Currently Amended) The ~~antenna~~ communication system of claim 1, wherein said predetermined maximum element spacing is no more than one-half times a wavelength corresponding to the carrier frequency.

3. (Currently Amended) The ~~antenna~~ communication system of claim 1, wherein said predetermined minimum group spacing is at least five times a wavelength corresponding to the carrier frequency.

4. (Currently Amended) The ~~antenna~~ communication system of claim 1, wherein said multiple elements constitute an adaptive antenna array and each group constitutes a sub-array.

5. (Currently Amended) The ~~antenna~~ communication system of claim 1, further comprising means for electronically steering said multiple elements.

6. (Currently Amended) The ~~antenna~~ communication system of claim 1, wherein said multiple elements constitute a switched beam antenna array.

7-28. (Cancelled)

29. (Currently Amended) A multi-point communications network comprising:
a receiver and transmitter disposed at a primary site;

a plurality of remote units disposed at respective secondary sites for communication with said receiver and transmitter at said primary site;

said primary site having an antenna including multiple elements for receiving communications signals over a carrier frequency from [[a]] said plurality of remote units, said elements being partitioned into a plurality of groups disposed remote from one another by at least a predetermined minimum group spacing sufficient to obtain spatial diversity, each group containing at least one element, at least one group including multiple elements located proximate to one another and no further apart than a predetermined maximum element spacing to facilitate spatial filtering.

30. (Original) The network of claim 29, wherein said predetermined maximum element spacing is no more than one-half times a wavelength corresponding to the carrier frequency.

31. (Original) The network of claim 29, wherein said predetermined minimum group spacing is at least five times a wavelength corresponding to the carrier frequency.

32. (Original) The network of claim 29, wherein said multiple elements constitute an adaptive antenna array and each group constitutes a sub-array.

33. (Original) The network of claim 29, wherein said antenna further comprises means for electronically steering said multiple elements.

34. (Original) The network of claim 29, wherein said multiple elements constitute a switched beam antenna array.

35. (Currently Amended) An adaptive antenna array architecture for communication, said architecture comprising:

a plurality of adaptive antenna arrays for signal reception, wherein said plurality of antenna arrays comprise a plurality of sub-arrays, wherein each sub-array includes at least two elements, wherein elements in said sub-arrays are no further apart than a predetermined maximum element spacing to facility spatial filtering, wherein said sub-arrays are spaced to obtain spatial diversity;

an array fixation structure for mounting said plurality of adaptive antenna arrays;

an array support structure for positioning said array fixation structure at a desired elevation; and

a base station for controlling said adaptive antenna array architecture.

36. (Cancelled)

37. (Cancelled)

38. (Previously Presented) A signal receiver for receiving communications signals, said receiver comprising:

an adaptive array for receiving signals from remote units;

a plurality of demodulator units for processing said signals;

a plurality of beamformers for constructing a desired signal response; and

a spatial diversity combiner for removing interference from said signals.

39. (Previously Presented) The receiver of claim 38, further comprising a direction of arrival processor for calculating a direction of arrival for said signals.

40. (Previously Presented) The receiver of claim 38, further comprising an orthogonal frequency division multiple access unit for segmenting available bandwidth into a plurality of frequency bins for allocation.

41. (Previously Presented) A method for reducing signal interference, said method comprising:

assigning at least one frequency bin to a user;

spacing said at least one frequency bin belonging to said user to at least one sufficiently different frequency to reduce inter-bin interference; and

locating said at least one frequency bin with at least one frequency bin of other users such that directions of arrival for said users are distinctly separable.

42. (Cancelled)

43. (Currently Amended) A method for allocating communication bandwidth, said method comprising:

determining a first direction of signal arrival for a first remote user and a second direction of signal arrival for a second remote user;

assigning [[a]] said first remote user to a first frequency bin; and

assigning [[a]] said second remote user to a second frequency bin based at least in part on said directions of signal arrival such that directions of signal arrival for adjacent frequency bins differ.

44. (Previously Presented) A method for avoiding interference in communications signals, said method comprising:

partitioning available bandwidth into a plurality of frequency blocks, said frequency blocks comprising a plurality of bins;

assigning a user to a bin in each of said frequency blocks; and

using signal power information to distribute said bins within said frequency blocks.